

Work Order ID 148928

Thursday, July 14, 2016 9:04:04 AM

148928

Page 1

Item ID: D3637-041 Accept ***N900040100*** Setup Start ***NS1***
 Revision ID: Stop ***NS2***
 Item Name: Bracket Assembly
 Start Date: 7/4/2016 Start Qty: 4.00 ***4*** Cust Item ID:
 Required Date: 7/12/2016 Req'd Qty: 4.00 ***4*** Customer:
 Reference:

Approvals: Process Plan: **DAS 21** Date: **JUL 14 2016** Tooling: Date: Run Start ***NR1***
 QC: **9-89** Date: SPC (Y/N): Date: Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
D3637	Rev B								
100	FLOW WATER JET	0.00				4			PR 2016/07/19 DAS 50 9-89
100	Waterjet	0.07							
FLOW CNC Waterjet	Memo 1-Cut as per Dwg D3637 Dwg Rev: B Prog Rev: B 2- Deburr if necessary								
110	QC2- Inspect parts off machine FAI/FAIB	0.00				4			PR 2016/07/19 DAS 50 9-89
110	QC	0.01							
Quality Control	Memo								
120	QC8- Inspect parts - second check	0.00				4			DAS 38 9-89 JUL 22 2016
120	QC	0.01							
Quality Control	Memo								

Work Order ID 148928

Tuesday, July 12, 2016 8:56:43 AM

148928

Page 2

Item ID: D3637-041 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: Stop ***NS2***
Item Name: Bracket Assembly
Start Date: 7/4/2016 Start Qty: 4.00 ***4*** Cust Item ID:
Required Date: 7/12/2016 Req'd Qty: 4.00 ***4*** Customer:

Reference:

Approvals: Process Plan: **DAS 21** Date: **JUL 13 2016** Tooling: Date: **Run Start *NR1***
QC: **9-89** Date: SPC (Y/N): Date: **Stop *NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
130 *130* Brake NC Brake NC	NC BRAKE Memo Form as per Dwg D3637	0.04 0.04			DAS 30 9-89	<u>21</u>			JUL 26 2016
140 *140* Small Fab Small Fab	Small Fab Memo 1- drill holes as per dwg using DT89792-C'Sink as per Dwg D3637 3- Install Nut plate as per Dwg D3637	0.00 0.09				<u>4X</u>			DAS 36 9-89 16/08/12
150 *150* QC Quality Control	QC5- Inspect part completeness to step on W/O Memo	0.00 0.01				<u>1608-04</u>			DAS 9 9-89

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval Completed By _____ Lead hand / Supervisor Approval Verification _____ QC / QA Coordinator Approval _____		
Description Work Order Deviation				Disposition					
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐							
		OTHER : ☐							

1 48928

Tuesday, July 12, 2016 8:56:43 AM

N900040100

Setup Start *NS1*

Stop *NS2*

Start Date: 7/4/2016 **Start Qty:** 4.00 ***4***

Required Date: 7/12/2016 **Req'd Qty:** 4.00 ***4***

Reference:

Run Start *NR1*

Approvals: **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____

Stop *NR2*

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Operation	Description
1	Start
2	Input: Read the number of elements to be sorted (n)
3	Input: Read the array of numbers to be sorted
4	Output: Print the array of numbers to be sorted
5	Process: Sort the array of numbers using bubble sort
6	Output: Print the sorted array of numbers
7	Stop

Set Up/ Run Hours

Tool ID**Tool #****Plan
Code**

Accept
Qty

Reject Qty

Reject
Number**Insp.
Stamp**

Identify as per dwg & Stock Location:

0.00

160

Memo

0.01

**DAS
6
9-89**

Packaging

Packaging

170

QC21- Final Inspection - Work Order Release

0.00

170

Memo

0.07

QC

Quality Control

**DAS
21
9-89**

AUG 4 4 2016

**DAS
21
9-89**

AUG 03 2016

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval		
Description Work Order Deviation				Disposition				Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐								
Misidentified ☐	Past Due ☐	OTHER :							

Picklist Print

Tuesday, July 12, 2016 8:56:42 AM

Page 1

Work Order ID: 148928

148928

Parent Item: D3637-041

D3637-041

Parent Item Name: Bracket Assembly

Start Date: 7/4/2016

Required Date: 7/12/2016

Start Qty: 4.00

Required Qty: 4.00

Comments: IPP Rev:A New Issue 07-07-20 JLM Verified By:EC
IPP Rev:B change to REV.B as per dwg 08-02-11 DD verified by:ec

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	-------------	--------------	---------------	----------------	--------

M304S14GA		Purchased				140	sf	52.8084	0.09	0.378947			
-----------	--	-----------	--	--	--	-----	----	---------	------	----------	--	--	--

M304S14GA

304SS sheet .080

PR 2016/07/19

Location	Loc Qty	Loc Code
----------	---------	----------

MAT019	37.7	
--------	------	--

M129972	5.7	
---------	-----	--

M135061	32	
---------	----	--

TPI	15.108421	
-----	-----------	--

M134604	15.108421	
---------	-----------	--

MS20426AD3-3		Purchased				100	Each	182.0000	2	8			
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MS20426AD3-3

RIVET

16/08/02 DAS 36 9-89

Location	Loc Qty	Loc Code
----------	---------	----------

GA	182	
----	-----	--

M131624	182	
---------	-----	--

MS21059L4		Purchased				140	Each	44.0000	1	4			
-----------	--	-----------	--	--	--	-----	------	---------	---	---	--	--	--

MS21059L 4

Nutplate

16/08/02 DAS 36 9-89

Location	Loc Qty	Loc Code
----------	---------	----------

OVER007	30	
---------	----	--

m135133	30	
---------	----	--

ST301	14	
-------	----	--

m134962	14	
---------	----	--

DQA: _____ Date: _____



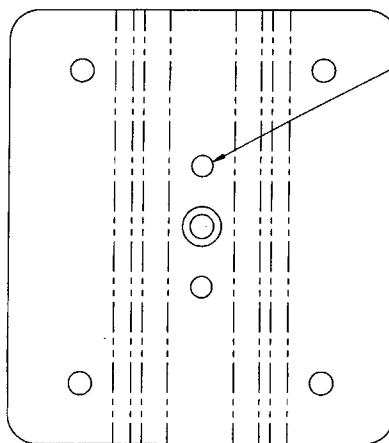
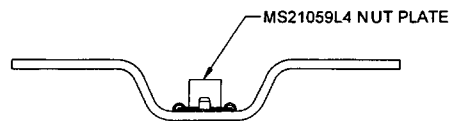
WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval		
Description Work Order Deviation				Disposition				Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval	

Root Cause				FAULT CATEGORY																																																											
Environment ☐	Design ☐	Doc/Data ☐	Equip/Tooling ☐	Handling/Pre ☐	Material ☐	Internal Transport ☐	Tribal Knowledge ☐	LOA ☐	Substation ☐	Past Expiry Date ☐	Misidentified ☐	No Re-verification ☐	Operator ☐	Offset/Setup ☐	Supplier ☐	Training ☐	Use for Testing ☐	Poor Information ☐	Rushing ☐	Product Improvement ☐	Process Improvement ☐	Manufacturing Process ☐	Past Due ☐	Pressure/Forced ☐	Bending ☐	Centre Not Concentric ☐	Cracks ☐	Crimp/Kink/Ripple/Wave ☐	Cuffs ☐	Crushing ☐	Heat Treat ☐	Wave/Twist in Tube ☐	Marks/Chatter ☐	Temperature/Cure ☐	Set-up ☐	BOM/Route ☐	Broken/Damage/Defect ☐	Inspection Incomplete/Unqualified ☐	Contamination ☐	Countersink ☐	Cut Too Short ☐	Instructions Incomplete/Unclear ☐	Drill Holes ☐	Power Loss/Surge ☐	Folio/Program ☐	Grain ☐	Weld ☐	Wrong Stock Pulled ☐	Out of Sequence ☐	Off-set ☐	Mislabeled ☐	Fit/Function ☐	Misaligned/off center ☐	Positioned Wrong ☐	Outside Dimensions ☐	Over/Under tolerance ☐	Part Incorrect ☐	Part Lost/Missing ☐	Part Moved ☐	Drawing ☐	Finish ☐	Misread ☐	Turning Sequence ☐
OTHER : _____																																																															



MS20426AD3-3 RIVET
(2 PLACES)

D3637-1 BRACKET

D3637-041 BRACKET ASSEMBLY
(WAS GENEVA P/N G10602-1)

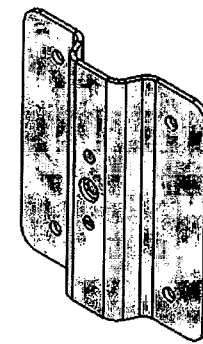
D3637-041 PARTS:

QTY	P/N	DESCRIPTION
X	D3637-041	BRACKET ASSEMBLY
1	D3637-1	BRACKET
1	MS21059L4	NUTPLATE
2	MS20426AD3-3	RIVET

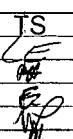
D3637-041 NOTES:

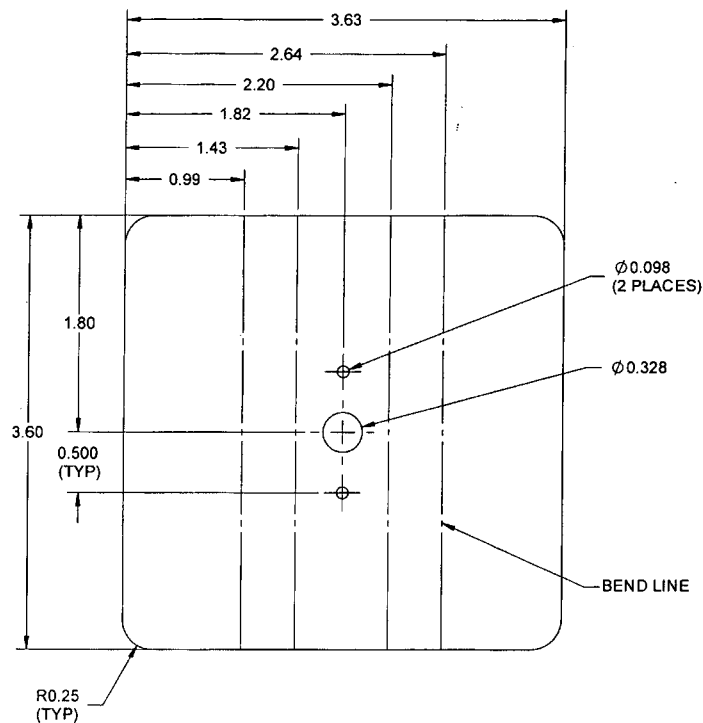
- 1) MATERIAL: N/A
- 2) FINISH: N/A
- 3) TOLERANCES: N/A
- 4) UNITS: N/A
- 5) BREAK SHARP EDGES: N/A
- 6) IDENTIFICATION: IDENTIFY WITH DART P/N "D3637-041" USING FINE POINT PERMANENT INK MARKER
- 7) WEIGHT: 0.27 lbs

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 148928 MCJ
16-07-13

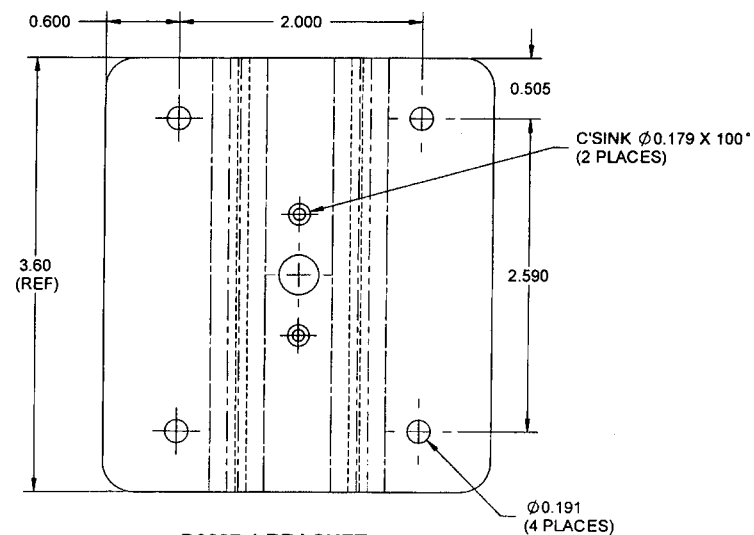
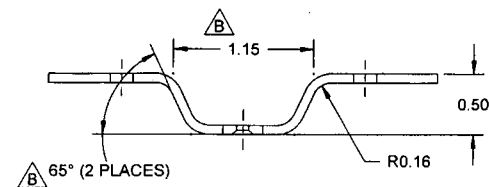


RELEASED
16-07-13

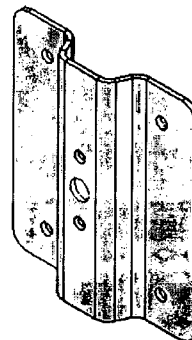
B	FOR D3637-1, 1.15 WAS 1.30 & "REF" REMOVED FROM ANGLE	LE	07.12.18
A	NEW ISSUE; REPLACES G10608, G10602 & G10609	LE	07.07.27
REV.	DESCRIPTION	BY	DATE
DESIGN		DART AEROSPACE LTD	
DRAWN		HAWKESBURY, ONTARIO, CANADA	
CHECKED		DRAWING NO.	REV. B
MFG. APPR.		D3637	SHEET 1 OF 3
APPROVED		TITLE	SCALE
DE APPR.		BRACKET	1:1
DATE		07.12.18	COPYRIGHT © 2007 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL, AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD



D3637-1F FLAT PATTERN



**D3637-1 BRACKET
(WAS GENEVA P/N G10608-1)**

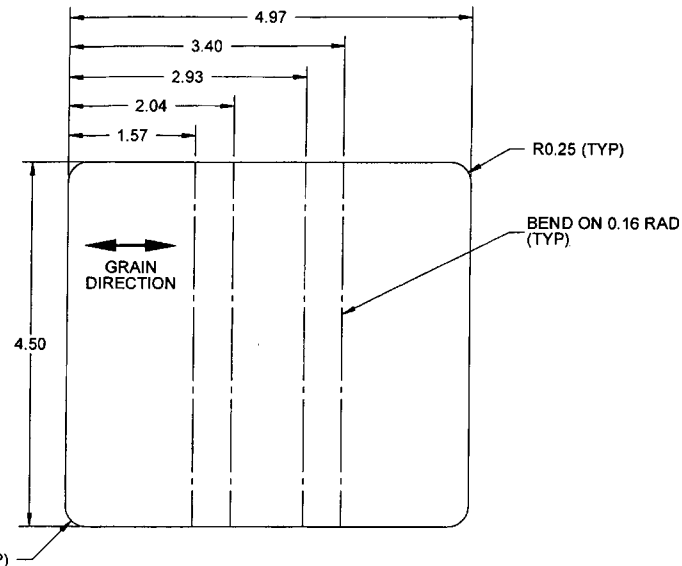


D3637-1 NOTES:

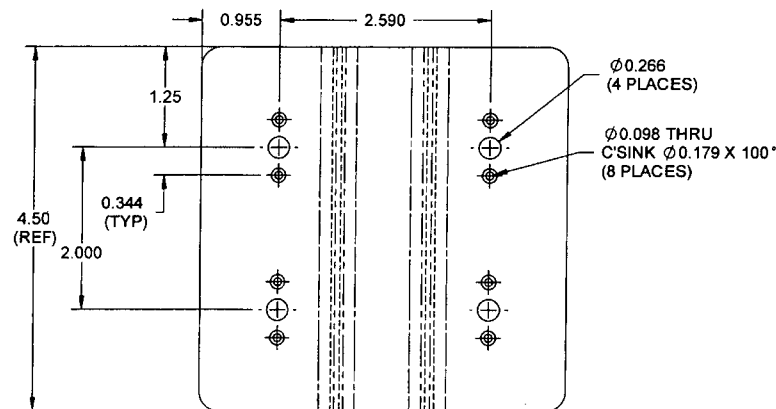
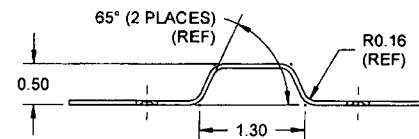
- 1) MATERIAL: AISI 304/316 SS SHEET, 14 GAUGE PER MIL-S-5059 (REF DART SPEC M304S14GA)
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: 0.26 lbs

DESIGN	TS	DART AEROSPACE LTD	
DRAWN	LE	HAWKESBURY, ONTARIO, CANADA	
CHECKED	RE	DRAWING NO.	REV. B
MFG. APPR.	LS	D3637	SHEET 2 OF 3
APPROVED	JS	TITLE	SCALE
DE APPR.	JS	BRACKET	1:1
DATE	07.12.18	COPYRIGHT © 2007 BY DART AEROSPACE LTD	
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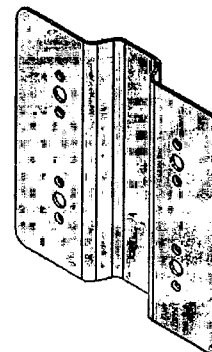
RELEASED
08-22-05



D3637-3F FLAT PATTERN



**D3637-3 BRACKET
(WAS GENEVA P/N G10609-1)**



D3637-3 NOTES:

- 1) MATERIAL: 2024-T3 ALUMINUM 0.050 THICK PER QQ-A-250/4 OR AMS 4037 (REF DART SPEC M2024T3S.050)
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY WITH DART P/N "D3637-3" USING FINE POINT PERMANENT INK MARKER
- 7) WEIGHT: 0.32 lbs

DESIGN	TS	DART AEROSPACE LTD	
DRAWN	LE	HAWKESBURY, ONTARIO, CANADA	
CHECKED	PH	DRAWING NO.	REV. B
MFG. APPR.	ED	D3637	SHEET 3 OF 3
APPROVED	W	TITLE	SCALE
DE APPR.	W	BRACKET	2:3
DATE	07.12.18	COPYRIGHT © 2007 BY DART AEROSPACE LTD	
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RELEASED
08-02-07

Work Order ID 148928***148928***

Page 1

Tuesday, July 12, 2016 8:56:43 AM

Item ID: D3637-041

Accept

N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Bracket Assembly

Start Date: 7/4/2016 Start Qty: 4.00

4

Cust Item ID:

Required Date: 7/12/2016 Req'd Qty: 4.00

4

Customer:

Reference:

Approvals: Process Plan: DAS Date: JUL 13 2016 Tooling: _____ Date: _____
QC: 21 9-89 Date: _____ SPC (Y/N): _____ Date: _____

Run Start ***NR1***Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
D3637	Rev B								

100

0.00

100

FLOW WATER JET

Waterjet

Memo

0.07

FLOW CNC Waterjet

1-Cut as per Dwg D3637 Dwg Rev: _____ Prog Rev: _____ 2-
Debur if necessary

110

QC2- Inspect parts off machine FAI/FAIB

0.00

110

QC

Memo

0.01

Quality Control

120

QC8- Inspect parts - second check

0.00

120

QC

Memo

0.01

Quality Control

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval 		
Description Work Order Deviation				Disposition					
								Completed By	
								Lead hand / Supervisor Approval Verification	
								QC / QA Coordinator Approval	

Root Cause			FAULT CATEGORY								
Environment	☐	No Re-verification	☐	Pressure/Forced	☐	Temperature/Cure	☐	Power Loss/Surge	☐	Positioned Wrong	☐
Design	☐	Operator	☐	Bending	☐	Set-up	☐	Folio/Program	☐	Outside Dimensions	☐
Doc/Data	☐	Offset/Setup	☐	Centre Not Concentric	☐	BOM/Route	☐	Grain	☐	Over/Under tolerance	☐
Equip/Tooling	☐	Supplier	☐	Cracks	☐	Broken/Damage/Defect	☐	Weld	☐	Part Incorrect	☐
Handling/Pre	☐	Training	☐	Crimp/Kink/Ripple/Wave	☐	Inspection Incomplete/Unqualified	☐	Wrong Stock Pulled	☐	Part Lost/Missing	☐
Material	☐	Use for Testing	☐	Cuffs	☐	Contamination	☐	Out of Sequence	☐	Part Moved	☐
Internal Transport	☐	Poor Information	☐	Crushing	☐	Countersink	☐	Off-set	☐	Drawing	☐
Tribal Knowledge	☐	Rushing	☐	Heat Treat	☐	Cut Too Short	☐	Mislabeled	☐	Finish	☐
LOA	☐	Product Improvement	☐	Wave/Twist in Tube	☐	Instructions Incomplete/Unclear	☐	Fit/Function	☐	Misread	☐
Substation	☐	Process Improvement	☐	Marks/Chatter	☐	Drill Holes	☐	Misaligned/off center	☐	Turning Sequence	☐
Past Expiry Date	☐	Manufacturing Process	☐								
Misidentified	☐	Past Due	☐	OTHER :							

